



UNITED STATES PATENT AND TRADEMARK OFFICE

ca
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/522,321

07/06/2005

Keith Biggadike

PG4858USw

8829

23347

7590

03/15/2007

GLAXOSMITHKLINE

CORPORATE INTELLECTUAL PROPERTY, MAI B475

FIVE MOORE DR., PO BOX 13398

RESEARCH TRIANGLE PARK, NC 27709-3398

EXAMINER

AULAKH, CHARANJIT

ART UNIT

PAPER NUMBER

1625

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

03/15/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/522,321	Applicant(s) BIGGADIKE ET AL.	
	Examiner Charanjit S. Aulakh	Art Unit 1625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12,14 and 16-33 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12,14 and 16-33 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>1/25/05</u> . | 6) <input type="checkbox"/> Other: ____. |

Art Unit: 1625

DETAILED ACTION

1. According to a preliminary amendment filed on Jan. 25, 2005, the applicants have canceled claims 13 and 15; amended claims 1-12, 14 and 16 and furthermore, have added new claims 17-33.

2. Claims 1-12, 14 and 16-33 are now pending in the application.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-12, 14 and 16-33 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The following eight different factors (see *Ex parte Foreman*, 230 USPQ at 547; *Wands, In re*, 858.F. 2d 731, 8 USPQ 2d 1400, Fed. Cir. 1988) must be considered in order for the specification to be enabling for what is being claimed:

Quantity of experimentation necessary, the amount of direction or guidance provided, presence or absence of working examples, the nature of the invention, the state of the prior art, the relative skill of those in the art, the predictability or unpredictability and the breadth of claims. In the instant case, the specification is not enabling based on at least four of the above mentioned eight different factors such as quantity of experimentation

necessary, the amount of direction or guidance provided, presence of working examples, state of the prior art, unpredictability and the breadth of claims.

In regard to lack of enablement issue of instant claims 1-12, 14 and 16-33 for solvates of instant compounds of formula I, there is no teaching or guidance present in the specification for preparing any specific solvates. Preparation of specific solvates of any compound is a very specialized field and involves their characterization using different techniques such as infrared spectrum, XRD powder diffraction etc. There is no teaching or guidance present in the specification regarding any specific solvents used for preparing specific solvates and their characterization using any techniques such as XRD powder diffraction or infrared spectrum etc. There is not even a single example present for preparing any specific solvate of instant compounds of formula (I). There is lot of unpredictability regarding stability of different solvates of any compound in the art. The instant compounds of formula (I) encompasses hundreds of thousands of compounds based on the values of variables R1-R5, n, m and Ar and therefore, in absence of such teachings, guidance, presence of working examples and unpredictability, it would require undue experimentation to select specific solvates of instant compounds with enhanced stability properties.

In regard to enablement rejection of claims 12, 14 and 20-22 for methods of treatment, the specification mentions that the instant compounds are agonists of beta 2 adrenoreceptors and furthermore, mentions that compounds of examples 1-13 had IC50 values below 1 uM using in vitro assay (see lines 3-9 on page 51 of specification). First of all, the applicants need to present this data in an affidavit form to validate agonist

Art Unit: 1625

activity of instant compounds in vitro. Secondly, it is well known in the art that in vitro activity does not necessarily always correlate with in vivo activity of a compound since unlike in vitro, in vivo activity is influenced by numerous factors such as absorption, metabolism, presence of enzymes, hormones etc. There is no teaching in the prior art that structurally closely related compounds having agonist activity at beta 2 adrenoreceptors in vitro are well known to have therapeutic utility in treating any disorder following their in vivo administration. There are no working examples present showing efficacy of instant compounds in known animal models of any disorder where hypoactivity of beta 2 adrenoreceptors is implicated. The instant compounds of formula (I) encompasses hundreds of thousands of compounds based on the values of variables R1-R5, m, n and Ar and therefore, in absence of such teachings, guidance, presence of working examples and prior art, it would require undue experimentation to demonstrate efficacy of instant compounds in known animal models of every known disorder where hypoactivity of beta 2 adrenoreceptors is implicated and hence their utility for treating but not prophylaxis of these disorders.

In regard to prophylaxis, it is well known that etiology of any known disease condition in the art involves multiple mechanisms. Correcting only one of these several mechanisms such as beta 2 agonist activity in the instant case, the instant compounds will not completely cure that particular disease condition.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 1625

5. Claims 1, 3, 5, 6, 7, 12, 14 and 17-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Bron (WO 95/19336, cited on applicant's form 1449).

Bron discloses Phenyl ethanol amine ethers and their use as beta-adrenoreceptor agonists. The compounds disclosed in examples 1-3, 5-7, 9 and 16, claims 1-9 as well as a process for preparing these compounds disclosed on page 5 anticipates the instant claims when Ar represents formula (a), R10 –R13 represent H and R1-R3 represent either H or one of R2 or R3 represents halogen, alkyl or alkoxy group in the instant compounds of formula (I).

6. Claims 1-3, 5-9, 12, 14 and 16-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Skidmore (GB 2140800, cited on applicant's form 1449).

Skidmore discloses Phenethanolamine derivatives having beta 2 adrenoreceptor agonist activity. The compounds of formula (I), pharmaceutical compositions containing these compounds and a process for preparing these compounds (see claims 1-11) disclosed by Skidmore anticipate the instant claims when Ar represents formula (a) and either one or both of R2 and R3 represent halogen, alkyl or alkoxy group in the instant compounds of formula (I).

7. Claims 1, 3, 5, 7, 12, 14 and 17-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Bradshaw (GB 2230523, cited on applicant's form 1449).

Bradshaw discloses ethanolamine derivatives having beta 2 adrenoreceptor agonist activity. The compounds of formula (I) and pharmaceutical compositions containing these compounds (see claims 1-8) disclosed by Skidmore anticipate the instant claims

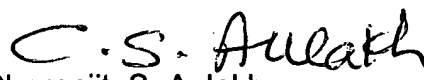
Art Unit: 1625

when Ar represents formula (c) and either one or both of R2 and R3 represent halogen, alkyl or alkoxy group in the instant compounds of formula (I).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charanjit S. Aulakh whose telephone number is (571)272-0678. The examiner can normally be reached on Monday through Friday, 8:30 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas McKenzie can be reached on (571)272-0670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Charanjit S. Aulakh
Primary Examiner
Art Unit 1625